INSTRUCTIONS

FOR

THE OPERATION AND MAINTENANCE
OF
FURNACE, DENTAL LABORATORY
ELECTRIC

110 Volt, 60 Cycles, AC

FSN 6520-966-3729

DSA2-9842

MANUFACTURED BY

J. F. JELENKO & CO., INC.
2020 JERICHO TURNPIKE

NEW HYDE PARK NEW YORK

MODEL TFA

DEFENSE MEDICAL SUPPLY CENTER

DEFENSE SUPPLY AGENCY

BROOKLYN, NEW YORK 11232

Enclosure 1

USER ACTIVITY COMMENT SHEET

INSTRUCTIONS FOR OPERATION AND MAINTENANCE OF
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2020 JERICHO TURNPIKE
NEW HYDE PARK, N. Y. 11041
CONTRACT DSA2-9842

PROBLEM AREA: (Kit Serial No._____, from case nameplate

Both Sides Of This Form To Be Reproduced Locally As Required.

Enclosure 2

L.F.A. & T.F.A. FURNACES

A. ELECTRICAL CHARACTERISTICS

		L.F.A.	T.F.A.
A-1	Wattage	1250 Watts	1500 Watts
A-2	Voltage	115V or 230V 50/60 Cycles A.C. Only	115V or 320V 50/60 Cycles A.C. Only
A-3	Maximum Temperature	1600°F - 870°C	1850°F - 1010°C
A-4	Current	10.5 Amperes	13 Amperes

B. PHYSICAL CHARACTERISTICS

B-1	Overall Dimensions	Width - 12" Depth - 11" Height - 15"	Width - 13-1/4" Depth - 10-1/2" Height - 16-1/2"
B-2	Muffle Dimensions	Width - 4-1/2" Depth - 5" Height - 4"	Width - 9" Depth - 4-3/8" Height - 4"
B-3	Weight Net	31	42
B-4	Shipping Weight	36	78

C. INSTALLATION

The L.F.A. & T.F.A. Furnaces may be operated on any ordinary lighting circuit. However, no other large electrical load should be put on the line while either furnace is in operation, which might cause the load to exceed the capacity of the line or its fuses.

It is advisable to install these furnaces as far as possible from any acid fumes.

These Furnaces may, if necessary, rest on a wooden bench while in operation. They have been designed so that the lower portion of the furnace does not exceed 100°F even when furnace is at maximum temperature.

D. GENERAL MAINTENANCE AND OPERATING SUGGESTIONS

Complete maintenance and operating instructions are contained on Page 2 of the L.F.A. and T.F.A. Operating Instructions. This is a printed booklet. If you do not have a copy, please request number required. Instructions are the same for both L.F.A. and T.F.A.

E. Servicing L.F.A. & T.F.A.

THERMOCOUPLE

E-1 A defective thermocouple will cause needle of pyrometer to be

Thermocouple (Continued)

driven up scale, interrupting light beam and shutting off furnace.

E-2 Replacement

a. Remove back cover of furnace
b. Remove all loose material from muffle chamber
c. Place furnace upside down
d. Remove bottom cage
e. Remove thermocouple clamp, located near thermocouple entrance to muffle, and pull out thermocouple.
f. Remove thermocouple lead wires from terminal block and remove thermocouple.
g. Remove insulation tubing from old thermocouple and slip on new thermocouple.
h. Insert new thermocouple in muffle. About 3/4" to 1" should protrude in muffle.
i. Connect thermocouple to terminal block, clean wires thoroughly with file or sandpaper before connecting - the shorter of the 2 wires is negative and must be connected to end terminal of block. If reversed pyrometer will work backwards.

MUFFLE UNIT

Controller turns on furnace, does not heat, or heats very slowly.

See L.F.C. service data for L.F.A.
See Twin Flask service data Page T/F 2 (3) T.F.A.

To replace vacuum tube, clean relay or any other repair necessary.

1. Remove any loose material from muffle chamber, including tray.
2. Place furnace upside down
3. Remove bottom cage
4. Remove 2 screws holding controller chassis
5. Stand furnace upright
6. Remove six (6) screws around outer edges of front panel.
7. Pull chassis out
8. When replacing be sure all connections on terminal block are securely fastened.

SPARE PARTS LIST - JELENKO FURNA-MATIC
MODEL TFA FURNACE-STOCK NO. (6520-966-3729)

PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
	FURNACE PARTS		
468AA	Bottom Instrument Case	478	Left Arch-Maranite
468B	Top Case	479	Right Arch-Maranite
468C	Door	480	Assembled Muffle Unit
468D	Back Cover	481	Thermocouple
473	Door Insulators	482	Vent Tube
474	Refractory Door Plate	563	Vent Tube Spring
423	Left Hinge	483	Terminal Board
424	Right Hinge	1616	Dial Light
488	Door Handle	148	Set Insulating Brick
421	Left Hinge Plate	484	Rubber Feet
422	Right Hinge Plate	1009G	Line Cord & Plug
476	Insulating Board-Maranite	199	Stainless Steel Tray
477	Top and Bottom Arches	472	Bottom Screen
	CONTROLLER PARTS		
1801	Controller Front Panel	1823	600 ohm Resistor
1805	Pyrometer	1825	22000 ohm Resistor
1808	Four Prong Socket	1826	15000 ohm Resistor
1811	Sensitivity Control w/switch	1830	Terminal Strip
1814	Chassis	1840	Optical Head Casting
1815	P & B Relay	1841	Optical Head Cover
1816	50 MFD Condenser	1842	#12 Bi-Pin Bulb
1817	Tube Socket	1843	#12 Bulb Socket
1818	Tube Shield	1844	Socket Clamp
1819	2D21 Tube	1845	CL-2 Photo-Cell
1820	Transformer	1846	4 Pring Plug
1822	Resistor Support		

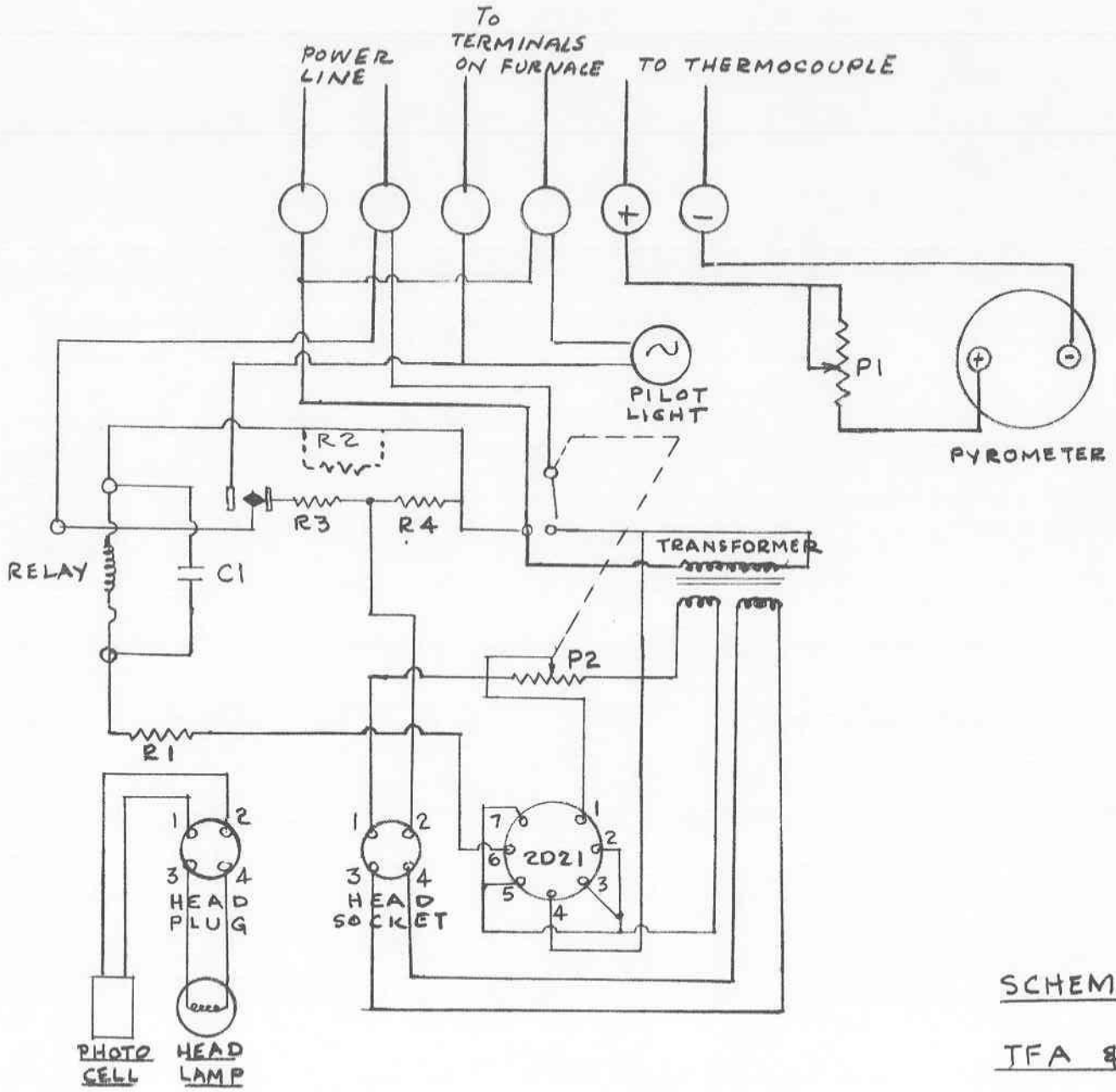
SPARE PARTS LIST - JELRUS FURNA-MATIC
MODEL TFA FURNACE-STOCK NO. (6520-966-3729)

PART NO.	DESCRIPTION	FSN	SOURCE
473	DOOR INSULATORS	9530-025-8968	DPSC
474	REFRACTOR DOOR PLATE	9530-216-2022	DPSC
480	ASSEMBLED MUFFLE	6520-216-2024	DPSC
481	THERMOCOUPLE	6685-216-2026	DPSC
199	STAINLESS STEEL TRAY	6520-216-2029	DPSC
1816	CAPACITOR 50 MFD	5910-754-6695	DESC
1819	ELECTRON TUBE 2D21	5960-284-9285	DESC
1823	RESISTOR, 600 OHMS	5905-972-9666	DESC
1825	RESISTOR, 22,000 OHMS	5905-171-2004	DESC
1826	RESISTOR, 15,000 OHMS	5905-279-2616	DESC
1842	12 BI-PIN BULB	6240-617-1488	DGSC

SOURCE

DGSC	DEFENSE GENERAL SUPPLY CENTER
DESC	DEFENSE ELECTRONIC SUPPLY CENTER
DPSC	DEFENSE PERSONNEL SUPPORT CENTER

ADDENDUM SHEET



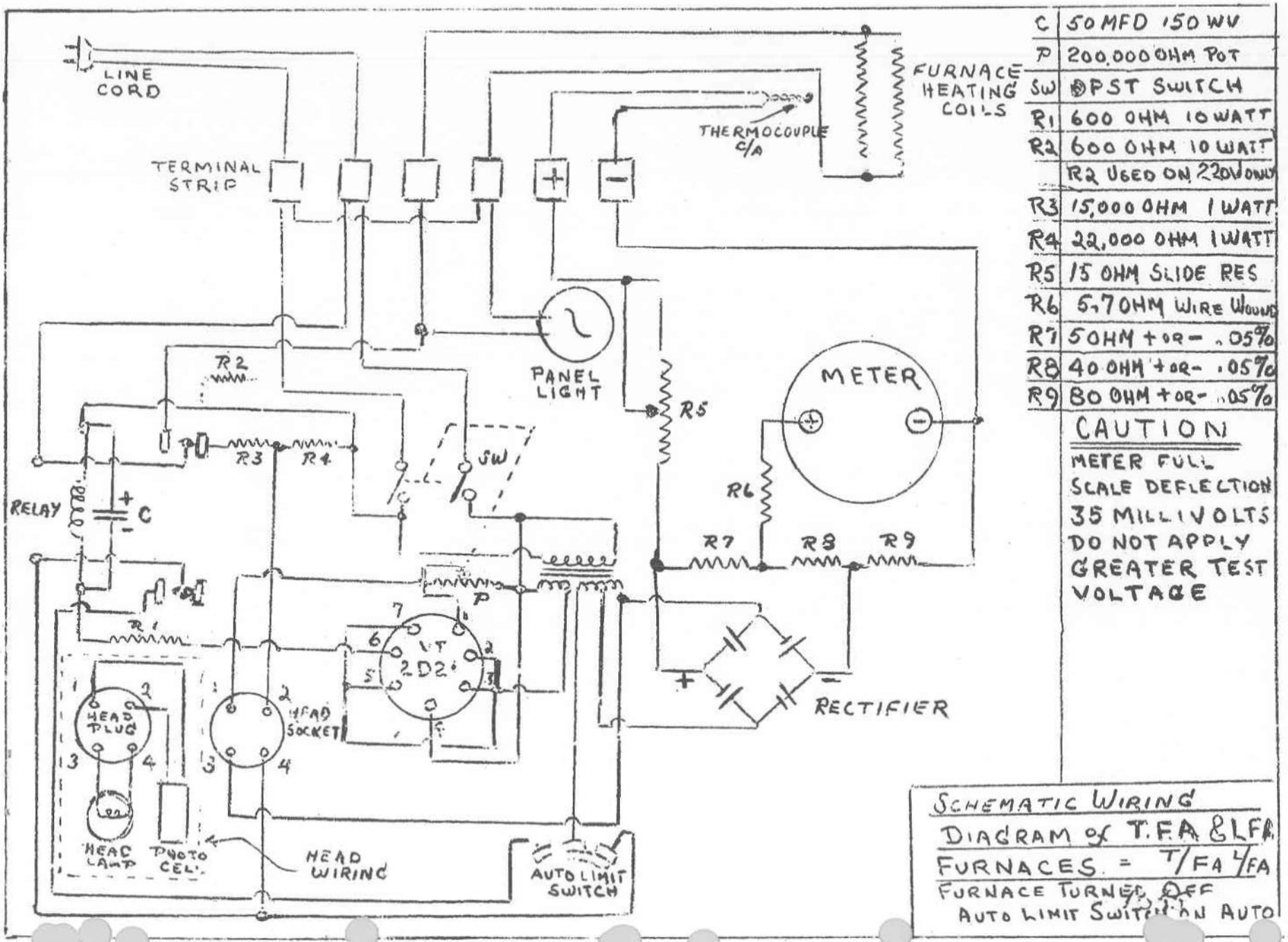
C1- 50 MFD
P1 - 50 Ω POT
P2- 200K POT & SWITCH
R1 - 600Ω - 10 W
R2- 600Ω - 10 W
ON 220V MODELS ONLY
R3- 22 KΩ
R4- 15 KΩ

SCHEMATIC WIRING DIAGRAM

TFA & LFA FURNACES

JELRUS TECHNICAL PRODUCTS

11-11-63



C	50 MFD 150 WV
P	200,000 OHM POT
SW	DPST SWITCH
R1	600 OHM 10 WATT
R2	600 OHM 10 WATT
	R2 USED ON 220V ONLY
R3	15,000 OHM 1 WATT
R4	22,000 OHM 1 WATT
R5	15 OHM SLIDE RES
R6	5,7 OHM WIRE WOUND
R7	5 OHM +OR- .05%
R8	40 OHM +OR- .05%
R9	80 OHM +OR- .05%

CAUTION

METER FULL SCALE DEFLECTION 35 MILLIVOLTS DO NOT APPLY GREATER TEST VOLTAGE

SCHEMATIC WIRING DIAGRAM OF T.F.A. & L.F.A. FURNACES = T/FA L/FA

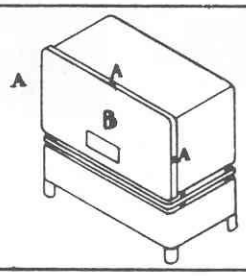
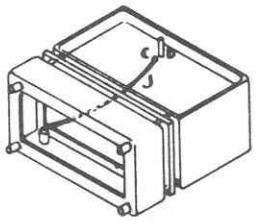
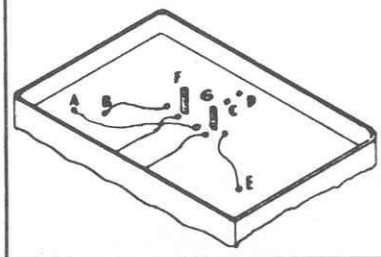
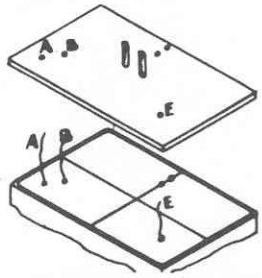
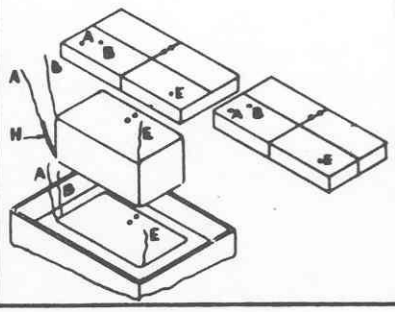
FURNACE TURNED OFF AUTO LIMIT SWITCH ON AUTO

INSTRUCTIONS FOR REPLACING MUFFLE UNIT IN TWIN FLASK FURNACE

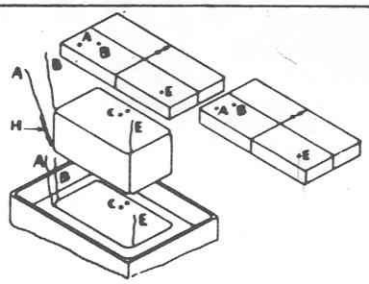
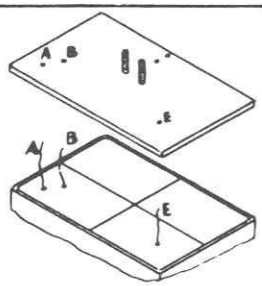
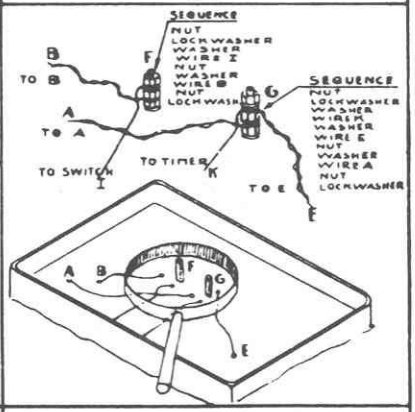
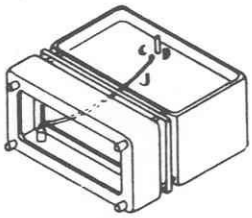
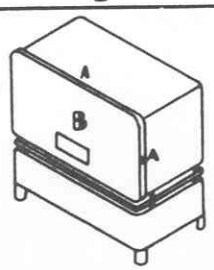
J. F. JELENKO & CO., INC. • NEW ROCHELLE, N. Y. 10801

M 365I

REMOVING BURNED OUT MUFFLE

STEP	DESCRIPTION	
	REMOVE 3 SCREWS "A" FROM SIDES OF CASE AND REMOVE BACK-PLATE "B"	
2	REMOVE LOOSE INSULATION BLOCKS "C"	
3	LAY FURNACE ON ITS FACE REMOVE THERMOCOUPLE "J" FROM INSTRUMENT MARKING EACH WIRE TO WHICH TERMINAL WIRE GOES -- WITHDRAW THERMOCOUPLE FROM HOLE "C". REMOVE METAL AIR VENT FROM HOLE "D"	
4	REMOVE NUTS AND WIRES FROM MUFFLE TERMINALS "F" AND "G".	
5	REMOVE TERMINAL PLATE.	
6	REMOVE INSULATING BLOCKS AT BACK OF MUFFLE CAREFULLY LAYING OUT BOTH LAYERS SO THEY MAY BE RE-INSTALLED AS TAKEN OUT. - GRASP LEAD WIRES. GENTLY WORK MUFFLE UNIT OUT. REMOVE INSULATING SLEEVES "H" FROM MUFFLE LEAD WIRE "A".	

INSERTING REPLACEMENT MUFFLE

STEP	DESCRIPTION	
1	REPLACE INSULATING SLEEVES "H" OVER WIRE "A" INSERT MUFFLE WITH HOLE "C" FOR THERMOCOUPLE TOWARD THE TOP OF FURNACE REPLACE INSULATING BLOCKS OVER REAR OF MUFFLE	
2	REPLACE TERMINAL PLATE - DRAWING LEAD WIRES THROUGH HOLES A - B AND E	
3	ATTACH LEADS "B" AND "I" TO TERMINAL "F" LEADS "A" "E" AND "K" TO TERMINAL "G" AS SHOWN ON DRAWING	 SEQUENCE NUT LOCKWASHER WASHER WIRE I NUT WASHER WIRE B NUT LOCKWASH TO B TO A TO SWITCH I TO TIMER K SEQUENCE NUT LOCKWASHER WASHER WIRE E NUT WASHER WIRE A NUT LOCKWASHER TO E
4	ATTACH THERMOCOUPLE TO INSTRUMENT IN BASE MAKING SURE THAT EACH WIRE GOES TO TERMINAL FROM WHICH IT HAS BEEN REMOVED REPLACE METAL AIR VENT WITH SPRING IN HOLE "D". STAND FURNACE UP-OPEN HOLE "C" FROM INSIDE OF MUFFLE AND INSERT THERMOCOUPLE	
5	REPLACE LOOSE INSULATION BLOCKS "C"	
6	REPLACE BACK PLATE "B" AND TIGHTEN 3 SCREWS	

A/C